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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,346

08/31/2006

Hiroyuki Yoshikawa

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7590

01/17/2008

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EXAMINER

JOHNSON, RYAN

ART UNIT

PAPER NUMBER

2817

MAIL DATE

DELIVERY MODE

01/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,346	Applicant(s) YOSHIKAWA ET AL.	
	Examiner Ryan J. Johnson	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/31/2006</u> . | 6) <input checked="" type="checkbox"/> Other: <u>2 Foreign documents</u> . |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed August 31st, 2006 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the foreign references referred to therein have not been considered.

Specification

3. The abstract of the disclosure is objected to because it is longer than 15 lines or 150 words. Correction is required. See MPEP § 608.01(b).
4. The examiner also suggests altering the headings within the specification:

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" may follow the section heading, or the section heading may preferably be omitted:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

5. Claim 2 is objected to because of the following informalities: "said control signal" lacks antecedent basis. The examiner recommends changing "said control signal" to "a control signal" or "a first control signal". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 3 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. The applicant recites "said control signal" in line 7 of claim 3. It is unclear whether the applicant is referring to the control signal recited in line 3 of claim 3, line 7 of claim 2, or whether they are the same control signal.

9. Claim 7 contains the trademark/trade name Bluetooth (see lines 4,7 and 16 of claim 7). Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a WPAN network standard and, accordingly, the identification/description is indefinite. The examiner recommends changing "Bluetooth mode" to "WPAN network mode".

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1,2,8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Grewing et al. (International Publication No. WO 03/032493 A2 hereinafter Grewing). U.S. Patent No. 7,154,347 will be hereinafter referenced to as a translation of WO 03/032493.

12. Regarding claims 1,8 and 9, Grewing discloses a phase modulation apparatus (Fig.1) suitable for use in a mobile radio or communications device (col.1,28-35) that generates a phase modulation signal (AS) by performing phase modulation on an input signal (MS), said phase modulation apparatus comprising a modulation signal generation section (2) that generates a first baseband modulation signal (6:6') and a second baseband modulation signal (8) base on said input signal (MS), a PLL circuit (1), and a switching section (35,36) that switches between having said PLL circuit generate a phase modulation signal by performing 1-point modulation, or generate a phase modulation signal by performing 2-point modulation (when in configuration mode, switches 35 and 36 are closed, deactivating compensating path 3 and leaving the modulation generating section 2 operating, enabling only 1-point modulation; col.5,50-65; When configuration is complete, both modulation generating section 2 and compensating path 3 are functional, enabling 2-point modulation; col.7,1-6), according to a communication mode (modulation configuration mode).

13. Regarding claim 2, Grewing discloses a determination section (31) that performs a comparative determination of a size relationship of a modulation bandwidth corresponding to the configuration mode and the PLL bandwidth (col.7,15-24). The switching section (35,36) must inherently use a control signal (not shown) in order to perform switching.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 1,2,5,8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trichet et al. (U.S. Patent No. 6,211,747, hereinafter Trichet) in view of Bogner et al. (U.S. Publication No. 2002/0160804, as cited by applicant and hereinafter Bogner).

16. Regarding claims 1,5,8 and 9, Trichet discloses a phase modulation apparatus (Fig.1), suitable for portable radio devices or communications devices (col.1,6-10), that generates a phase modulation signal (110) by performing phase modulation on an input signal (100), said modulation apparatus comprising a modulation signal generation section (60) that generates a first baseband modulation signal (input into 61) and a second baseband modulation signal (input into 70) and a PLL circuit. Trichet discloses DAC 70 as an adjustable gain DAC, controlled by a control unit (col.4,52-555) in order to adjust for varying bandwidths (col.6,9-14). Trichet does not explicitly disclose limiting the DAC gain to zero in order to enable only one-point modulation. Bogner discloses that a UMTS signal requires a wide bandwidth while GSM requires a narrow bandwidth ([0008]). It would be obvious to one of ordinary skill in the art at the time the invention was made to have optimized the gain of the DAC of Trichet to zero in order to have provided a narrow bandwidth for the GSM signal while increasing the DAC gain during UMTS use in order to have accommodated the broader bandwidth required by the UMTS signal.

17. Regarding claim 2, Trichet discloses a determination section (90) that performs a comparative determination of a size relationship of a modulation bandwidth

corresponding to a communication mode and a bandwidth of said PLL circuit (col.6,22-37), and that the switching section performs switching according to a control signal (DAC 70 performs its gain adjustment depending on signal 190).

18. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grewing (International Publication No. WO 03/032493 A2) in view of Tomesen et al. (U.S. Patent No. 6,282,249, as cited by applicant and hereinafter Tomesen). Grewing discloses the limitations of claims 1 and 2, as discussed above, but does not explicitly disclose changing the resonant frequency of the loop filter in order to change the bandwidth of the PLL circuit. Changing the loop filter resonant frequency in order to optimize the loop bandwidth is well known in the art. Tomesen discloses switching components within the loop filter structure in order to increase or decrease the loop bandwidth (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have also changed the resonant frequency of the loop filter of Grewing, in a manner as disclosed by Tomesen, in order to have optimized the loop bandwidth.

19. Claims 3,6,7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trichet (U.S. Patent No. 6,211,747) in view of Bogner (U.S. Publication No. 2002/0160804) as applied to claims 1 and 2 above, and further in view of Tomesen (U.S. Patent No. 6,282,249). Trichet and Bogner disclose the limitations of claims 1 and 2, as discussed above, but do not explicitly disclose changing the resonant frequency of

the loop filter in order to change the bandwidth of the PLL circuit. Changing the loop filter resonant frequency in order to optimize the loop bandwidth is well known in the art. Tomesen discloses switching components within the loop filter structure in order to increase or decrease the loop bandwidth (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have changed the resonant frequency of the loop filter of Grewing, in a manner as disclosed by Tomesen, depending on the required bandwidth of the required communication mode, in order to have optimized the loop bandwidth.

20. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grewing (International Publication No. WO 03/032493 A2). Grewing discloses the limitations of claims 1 and 2, as discussed above. Grewing also discloses altering the divider ratio of the PLL loop (col.6,14-17). Grewing does not explicitly disclose a reference frequency divider. However, such reference dividers are well known in the art and are used in order to optimize the input frequency to the loop filter depending on the required loop characteristics and output frequencies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a well-known reference divider in order to have optimized the loop characteristics and output frequencies.

21. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trichet (U.S. Patent No. 6,211,747) in view of Bogner (U.S. Publication No.

2002/0160804) as applied to claims 1 and 2 above, and further in view of Imai et al. (Japanese Patent No. JP 04358415 A, hereinafter Imai). Trichet and Bogner disclose the limitations of claims 1 and 2, as discussed above, but do not explicitly disclose a reference divider, or modifying the divider ratio. Modifying the divider ratio is a well known method of optimizing the loop bandwidth and phase noise characteristics of a phase locked loop. Imai discloses setting the divider ratios in order to obtain a satisfactory phase noise characteristic (See: last sentence of CONSTITUTION). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a well-known reference divider and to have adjusted the divider ratio of the feedback divider and input reference frequency in order to have optimized the loop characteristics and output frequencies.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Filiol et al. (U.S. Patent No. 6,515,553) discloses calibration of a two-point modulator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan J. Johnson whose telephone number is 571-270-1264. The examiner can normally be reached on Monday - Thursday, 9:00 am - 5:00 pm EST.

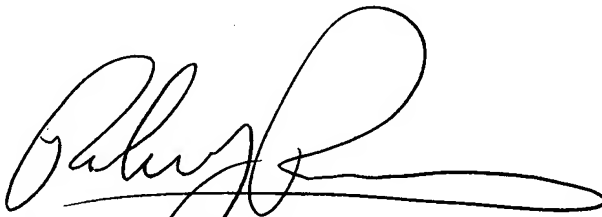
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RJJ/



Robert J. Pascal
SPE 2817